

物理学グローバルCOE特別講義3
「科学論文執筆のための英語」
English Scientific Writing

2011年 前期

担当講師: Glenn Paquette

TA: Andrew Hillier

場所: 理学研究科5号館525号室

7月25、26、27日: 16:30~18:00

7月28、29日: 10:30~12:30、16:30~18:00

I. Information about this class

Class Plan

- 7/25 Lecture: Introduction, Special Topic 1, Special Topic 2
Quiz: None
- 7/26 Lecture: Discussion of HW1, Special Topic 3, Analysis of papers
Quiz: None
- 7/27 Lecture: Discussion of HW2, Special Topic 4, Analysis of papers
Quiz: Quiz 1 (on HW1)
- 7/28 I Lecture: Discussion of HW3 and Quiz 1, Special Topic 5, Analysis of papers
Quiz: Quiz 2 (on HW2)
- 7/28 II Lecture: Discussion of HW4 and Quiz 2, Special Topic 6, Analysis of papers
Quiz: Quiz 3 (on HW3)
- 7/29 I Lecture: Discussion of HW5 and Quiz 3, Special Topic 7, Analysis of papers
Quiz: Quiz 4 (on HW4)
- 7/29 II Lecture: Discussion of Quiz 4, Special Topic 8, Analysis of papers
Quiz: Quiz 5 (on HW5)

Class Website

Most* class material will be uploaded onto the following website:

*To protect the students' privacy, student papers will not be uploaded.

Grading

- | | |
|-----------------|-----|
| 1. Final paper: | 50% |
| 2. Homework: | 20% |
| 3. Quizzes: | 20% |
| 4. Attendance: | 10% |

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Papers

I will spend approximately 1/3 of the class time on student papers, analyzing their strengths and weaknesses and suggesting improvements. Students will work outside of class rewriting them. Each student will submit the final version of his/her paper by August 15th. This will determine 50% of the class grade.

Quizzes

There will be 5 quizzes. The n th quiz will cover mainly material from the n th homework, but it may also include material from previous homework assignments.

II. Learning a foreign language

Learning to Write in a Foreign Language

Q: What is the best way to proceed?

A: Practice.

1. Read a variety of works written by native speakers, paying close attention to word usage, sentence construction, etc.
2. Practice your own writing, modeling it after that of native speakers.
3. Repeat 1 and 2 (a lot).

My Teaching Philosophy

Most Japanese scholars have sufficient passive knowledge of English to properly express their ideas, but misconceptions prevent the proper use of this knowledge. My goal is to identify misconceptions and show how the mistakes to which they lead can be remedied.

Japanese is the Source of Most Misconceptions

There are many misconceptions that seem to be almost universal among Japanese scientists. In most cases, these misconceptions have their source in the Japanese language.

Why?

Japanese and English are very different:

1. Structure, sense.

- difference in logic, role of the reader

2. Individual words.

- no one-to-one relation (Japanese words often have broader meanings)

Types of Problems

- a. Mistranslation of Japanese words
- b. Use of Japanese-like sentence structure and thinking
- c. Lack of information

a. Mistranslation of Japanese words

Examples: *especially, abbreviate, discuss, show, by, or, popular, each other, hint, indispensable, namely, on the contrary, on the other hand, plural, remarkable, rest, such as, thus/therefore/hence, view/viewpoint, take, put.....*

Cause: Over-reliance on Japanese-English Dictionaries

Japanese and English words are not “one-to-one”

Example

In scientific writing, there are many situations in which Japanese word 示す is appropriate. However, in such situations, the most appropriate term in English could be any one of the following (or something else):

show, exhibit, display, indicate, represent, express, reveal, depict, describe, denote, present, give, list, state, demonstrate, prove, give, yield, produce, suggest.

Each of these expresses a different meaning.

Solution: Use English-English Dictionaries

Some English dictionaries:

- i. Oxford English Dictionary (CDROM)
- ii. American Heritage: www.bartleby.com/am
- iii. Merriam-Webster:
www.m-w.com/dictionary.htm
- iv. Webster's:
humanities.uchicago.edu/orgs/ARTFL/forms_unrest/webster.form.html
- v. Dictionary.com: dictionary.reference.com
- vi. WordNet: wordnet.princeton.edu/perl/webwn

Please note

- Oxford: Some (many) of the meanings listed are no longer in use
- American Heritage Dictionary and Merriam Webster have useful “usage notes”

b. Use of Japanese-like sentence structure and thinking

Examples: pronouns, sentence structures using *as for*, *compared*, *both*, *change*, *depending*, *difference*, *difficult*, *categorize/classify*, *contrast*, *nothing but*, *possible.....*

Cause: Translation of Japanese into English

Solution:

Avoid writing (thinking) in Japanese and then translating into English.

c. Lack of Information

Cause: Same as above (translation of Japanese)

Q: Why is there such a problem?

A: Japanese and English are very different.

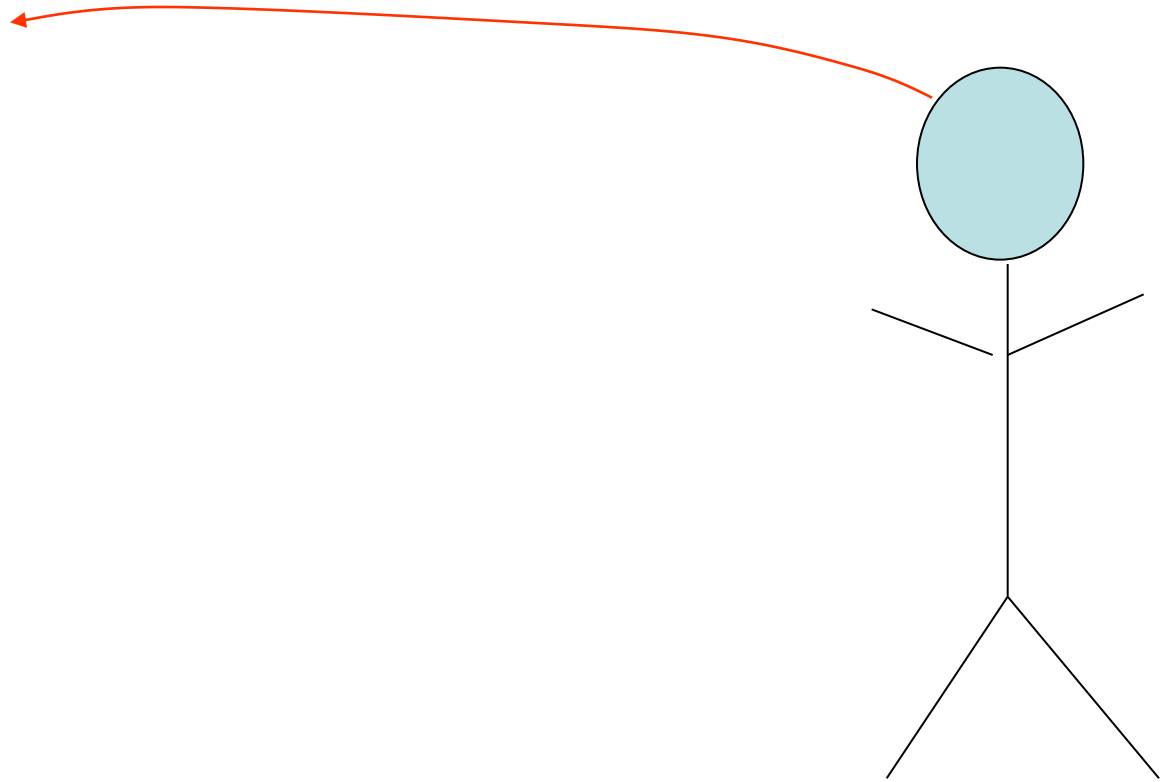
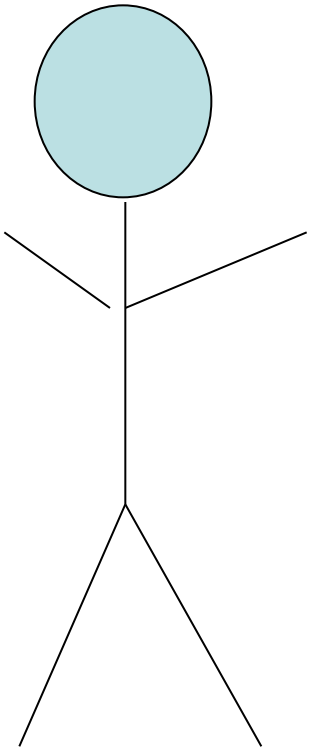
The communication of ideas

All languages are used to communicate ideas, but there are variations among languages with regard to the manner in which this is accomplished.

Let us briefly compare Japanese and English.

Japanese vs. English

Japanese



Japanese vs. English

English



The Reader's Expectation:

In Japanese, English-like writing is possible and in English, Japanese-like writing is possible. But both are unnatural.

The ultimate judge is the reader, and hence this depends on the reader's expectation.

Clarity

In English, and especially in the context of science, good writing is clear writing. The goal is to make the reader's job easy.

Simplicity

- The goal is clarity, which is best realized through simplicity.
- Avoid complex sentence structures and complicated expressions if possible.
- If you are unsure of the usage of a word or sentence structure, it is probably wrong.
- Simplicity is best: Complexity should result only from necessity.

Final Word

If one's goal is to write papers in English, one should not start by writing (or thinking) in Japanese.

III. Scientific Writing

What is a Scientific Paper?

A scientific paper is a means to inform other people about your research. Hence, the goal in writing a paper is to make it as easy as possible for other people to understand what you have done.

Parts of a Scientific Paper

In general, scientific papers consist of the following parts:

1. Abstract
2. Introduction
3. “Main” part
4. Conclusion

1. Abstract

The abstract consists of an summary of the paper.

2. Introduction

The introduction serves a number of purposes. Among these are the following:

1. Provide a background. (Where does the present work fit in the “big” picture?)
2. Motivate the present work. (Why is it meaningful to do this work?)
3. Describe the present work. (What is done and how is it done?)

4. Briefly state the result (What do you find?)
5. Briefly describe its significance (Why is this result important?)

3. Main Part

In the main part of the paper, the actual work is presented.

4. Conclusion

The conclusion serves many purposes. Among these are the following:

1. Provide a summary of the present work and restate the result(s).
2. Discuss its significance and scope.
3. Discuss its strengths and weaknesses.
4. Describe how it relates to other works.
5. Discuss related future research.

The reader should be able to get a good idea of what you did in the paper, how you did it, and what its significance is from reading just the introduction and conclusion. (Indeed, many people will read only these before deciding whether to read the rest of the paper.)